



Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report For Blueberry Estates

What is SWAP?

The Source Water Assessment and Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS NAME	Blueberry Estates
PWS Address	Vaughn Street
City/Town	Lakeville, Massachusetts
PWS ID Number	4146039
Local Contact	Wayne Southworth
Phone Number	(508) 238-4230

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well No. 1	4146039-01G	231	567	Moderate
Well No. 2	4146039-02G	231	567	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The wells for Blueberry Estates are located on the northeast side of Vaughn Street and generally east of the main buildings. Both Well No. 1 and Well No. 2 have Zone I radii of 231 feet and Interim Wellhead Protection Area (IWPA) radii of 567 feet. The IWPAs provide interim protection areas for water supply wells when the actual recharge area has not been delineated. The actual recharge area to the wells may be significantly larger or smaller than the IWPAs. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone Is and IWPAs.

The well serving the facility has no treatment at this time. The DEP requires public water

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

suppliers to monitor the quality of the water. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate Activities in Zone I;**
2. **Aboveground Storage Tanks (AST) With Heating Oil;**
3. **Private Septic Systems; and,**
4. **Athletic Fields**

The overall ranking of susceptibility to contamination for the well is moderate, based on the presence of at least one moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone I** – Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone I contains a driveway/access road to the multi-family residences. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Redirect the driveway/access road so that it no longer runs through the Zone I.

2. **Private Septic Systems** – Private septic systems are potential sources for the introduction of hazardous chemicals and microbial contaminants into the aquifer.

Recommendation:

- ✓ Regularly schedule maintenance and inspections of the septic systems and encourage residents to properly disposal of household hazardous waste.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Driveways/road and parking areas	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
Septic System	No	Yes	Moderate	See septic systems brochure in the appendix
Lawn care/gardening	No	Yes	Moderate	Encourage residents in proper storage, disposal, and application of pesticides.
Athletic Field	No	Yes	Moderate	Fertilizer and pesticide use

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

3. **Lawn care/gardening** – The pesticides and fertilizers used for maintaining athletic fields can be transported from the ground surface down into the aquifer with storm water and excess irrigation water. The over-application or improper storage and disposal of pesticides and fertilizers could result in contamination of the aquifer.

Recommendation:

- ✓ Inform the owners of the athletic fields that they are located in the IWPA of public water supply wells and encourage them to use proper storage, disposal, and application procedures with pesticides and fertilizers.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Blueberry Estates is commended for having a formal Emergency Response Plan to deal with spills or other emergencies. Blueberry Estates should review and adopt the key recommendations above and the following:

Priority Recommendations:

- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Redirect the driveway/access road so that it no longer runs through the Zone I.

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ Redirect the driveway/access road so that it no longer runs through the Zone I.
- ✓ Consider well relocation if Zone I threats cannot be mitigated.
- ✓ Prohibit public access to the well and pumphouse by locking facilities, gating roads, and posting signs.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism, check any above ground tanks for leaks, etc.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

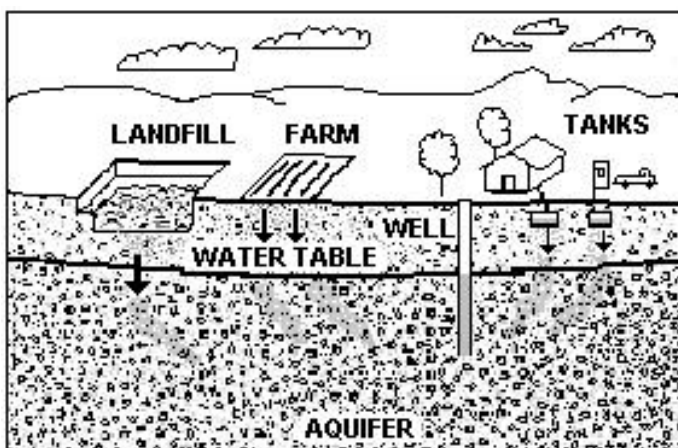


Figure 1: Example of how a well could become contaminated by different land uses and activities.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, and certified operator. Post labels as appropriate on raw materials and hazardous waste.
- ✓ Post drinking water protection area signs at key visibility locations.
- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis.
- ✓ For utility transformers that may contain PCBs, contact the

For More Information:

Contact Isabel Collins in DEP's Lakeville Office at (508) 946-2726 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been made available to the public water supplier and town boards.

utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- ✓ Work with local officials in town to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form